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ABSTRACT

This paper is intended to provide both a framework and a rationale for consideration of the problem of school district reorganization. The problems involved in determining optimum school district size are discussed and characteristics of inadequate districts are studied. Five criteria of optimum size are described, including (1) scope of program, (2) range of educational services, (3) the community, (4) administrative and instructional staff, and (5) the economic base. Trends in district reorganization, especially decentralization and community control, are discussed and a table is included that summarizes, from research literature, recommendations for optimum size. The conclusion of the report is that size must be viewed as a variable and not as an absolute factor. Situational variables are strong and may profoundly influence the size-quality relationship in a district. (Author/MF)

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Optimum School District Size

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December 1969

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Research Analysis Series, Number One

Edited by Stuart C. Smith

Preface

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We are pleased to begin this new series of papers analyzing current research findings on topics in educational administration. Papers in the research analysis series, in addition to summarizing the literature on a given topic, also evaluate and analyze its significance.

This first paper in the series was originally published under the title, "The Question of Optimal Size of School Districts," in March 1969, by the School Information Research Service at Seattle, Washington. The author, Mr. Michael E. Hickey, was employed by SIRS as a Research Associate while serving as an NDEA Fellow in educational administration. In revising the paper for publication by the Clearinghouse, Mr. Hickey added several recent studies to the analysis and enlarged the paper's scope. He is now Assistant to the Superintendent, Seattle Public Schools.

Philip K. Piele
Director

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Introduction

The concern over the reorganization of school districts is not new. As long ago as 1938, the Washington State Planning Council issued the following statement:

> Legislature after legislature has wrestled with the problem of equalization of financial support for common schools of the State, but we are still far from this goal. The study of the Council has convinced it that the school district is the key-log that jams all efforts for equalization, not only of financial support, but of educational opportunity in its broader aspects.

More recently, however, pending legislation and mandated redistricting have intensified these concerns and brought them to bear on some of the complex considerations involved in restructuring education. Since the basic concern of this discussion is with the organization of school districts, it would not be deviating to define the concept "organization" and consider briefly some of the habits of the beast.

According to Presthus (1962), man lives in an organizational society. The ubiquitous nature of organizations has been summarized by Etzioni as follows:

> We are born in organizations, educated by organizations, and most of us spend much of our lives working for organizations. We spend much of our leisure time paying, playing, and praying in organizations. Most of us will die in an organization, and when the time comes for burial, the largest organization of all--the State--must grant official permission (1964, p. 1).

The proclivity of man to organize is not accidental. Rather, it reflects a commitment to the moral values of rationality, effectiveness, and efficiency, which society has found obtainable through a loosely defined means of social grouping called the organization. Without pretending to add to the precision of previous definitions of the term, in this discussion we will simply define "organization" as a grouping of individuals deliberately constructed to accomplish specific purposes.

The organization, once established, develops needs of its own and these increase as the organization grows in size and complexity. All too often, however, a point is reached at which a sort of displacement occurs in which the organization begins directing its efforts at maintaining itself, rather than toward achievement of the goals which constitute the raison d' etre of the organization. In brief, the means become the end.

In a sense, it is this sort of displacement of goals that is the crux of the problem with which many educational administrators and legislators are now confronted. The fundamental question seems to be: How can districts be organized so that their maximum efforts are directed toward attainment of appropriate educational goals, rather than toward maintenance of the organization?

This paper is intended to provide both a framework and a rationale for consideration of the problem of school district reorganization. It focuses on what obviously constitutes one of the critical variables with which restructuring is concerned, namely size, and relates it to specified criteria which are major concerns of the educational process. In the remainder of the paper, then, we will examine the following major aspects of the problem of local district reorganization:

1. Reasons for concern with optimum size.
2. Problems involved in determining optimum size.
3. Characteristics of inadequate districts.
4. Optimum district size according to several commonly stated criteria.
5. Trends in district reorganization.
6. Summary of research findings on the effect of size on performance.

Reasons for Concern with Optimum Size

The question of optimum size has been the subject of increasing interest primarily because of the widespread attempts to reorganize local school districts. Although there are other bases for this concern as well, most of these can be viewed from the perspective of their relationship to, and implications for, the reorganization of local districts. These other causes, which will be discussed in subsequent sections of this chapter, include the following:

1. Efficiency of operation.
2. Maximum use of limited resources.
3. Increased public accountability for educational expenditures.
4. Equality of educational opportunity.
5. Assumed relationship between size and quality.

School district reorganization

The Missouri School District Reorganization Commission, in stating the philosophy which guided its formation and operations, delineated a statement of purpose to which most States, it is felt, would readily subscribe. The Commission stated:

> The major purpose of school district reorganization is to establish the framework which will provide a quality educational program and, as far as possible, an equal opportunity for every child in the state to receive an education geared to his ability, interests and need. School Districts should be organized in such a manner that all resources for education can be used wisely and efficiently. School district reorganization should develop strong school districts, strengthen the state and local relationships, and encourage effective local and state participation (1968, p. 18).

The concern with reorganization, like other hoary traditions and remnants of past education wars, has been around a long time. Local school districts have long typified American education. Yet in recent years a number of critics, such as Charles Benson, have argued forcefully and with increasing support for greater consolidation of educational units. Benson has written:

> Is the perpetuation of our present extreme degree of decentralization necessary for the further improvement of the quality of education in the United States? I suspect the contrary is true, that quality awaits some measure of centralization. Any attempt to improve basic recruitment to the field of education runs afoul of the hiring, promotion, and salary policies of our many thousands of school districts, policies that the districts are themselves helpless to change. Local districts are peculiarly ill-fitted to finance and administer the retraining of teachers, toward the end that we arrive at a stage of education in which teachers as well as students are consciously engaged in a continuous process of learning. Small local districts are basically unprepared to make significant improvements in education of the so-called terminal students -- in part for reasons of cost and in part because of extreme scarcity of competent professional staff in the vocational and technical programs (1965).

One of the first authorities to challenge school decentralization was Horace Mann who, in 1837, stated that the "... greatest calamity that had happened to public school education in Massachusetts was the establishment of common (i.e., local) school districts." It would seem that with such impressive leadership behind school reorganization, the problem would have been long ago effectively resolved. But it is one of the paradoxes of education that, in spite of this long awareness of the problem, the results have not been overly impressive.

Although many States have had active redistricting programs in effect since 1945, figures from the Office of Education for the year 1968 point to the relative inefficacy of redistricting efforts (see Table I). As Table I indicates, of 19,977 operating systems in 1968, 8,227 or 41.18% contained fewer than 300 pupils. The pupil population of these small districts was 699,518 or 1.62% of the 43 million-plus students in the United States.

A variety of circumstances seem to have contributed to the need for district reorganization. Morphet, Johns, and Reller list four:

1. Improvements in transportation and communication.
2. The expanding educational program.
3. Changing economic circumstances.
4. Changing patterns of educational leadership (1967, pp. 266-267).

In 1947, the National Commission of School District Reorganization designated six factors leading to reorganization. These were:

1. The gradual decrease in the size of farm families and an increase in the size of farms have caused a rapid decline in the number of school age children in farming or rural areas. Changes in social and economic relationships and in the distribution of population influence the kind of school organization deemed to be necessary.

Table I. Distribution of Public School Systems and Public School Pupils by Size of System

Size of system	Public school systems		Public school pupils	
	Number	Percent	Number	Percent
Systems with 300 pupils or more	11,750	58.82	42,405,583	98.38
25,000 or more	168	0.84	12,318,363	28.58
10,000 to 24,999	516	2.58	7,570,468	17.56
5,000 to 9,999	1,068	5.35	7,398,119	17.16
2,500 to 4,999	1,952	9.77	6,783,897	15.74
1,000 to 2,499	3,498	17.51	5,666,626	13.15
600 to 999	2,008	10.05	1,561,286	3.62
300 to 599	2,540	12.72	1,106,824	2.57
Systems with less than 300 pupils	8,227	41.18	699,518	1.62
Total operating systems	19,977	100.00	43,105,101	100.00

Source: Education Directory, 1968-69, Part 2, Public School Systems, Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics.

2. As improvements have come about in transportation and communication, the result has been to increase the size of the communities.
3. For many decades there has been almost continuous migration of young people from rural areas to urban centers. The experiences now being provided in the elementary grades and in the traditional curricula of small rural high schools do not furnish the educational preparation needed for effective participation in urban life.
4. The demands for new and better educational programs have resulted in longer school terms and more students staying in school for a greater number of years. This increased need for education has caused shifting toward larger administration units.
5. The need for a better educational program is generally recognized by only a few leaders of the community. Unless these leaders are willing to interpret the educational needs to the general public, inefficient school districts will continue to survive.
6. The inability of small districts to provide adequate educational services and the exorbitant costs per pupil have been a real help in the consolidation and reorganizing of small school districts (1947, p. 28).

Efficiency of operation

A second reason for concern with optimum size is the quest of administrators and board members for efficiency of operation. From the economist's viewpoint, "... efficiency involves the maximization of output for a given cost" (Kneller, 1968, p. 314). Unfortunately, there is little evidence of the "hard data" type to indicate that the efficiency of the $28-billion-a-year education industry has improved in proportion to the drastically increased expenditures of recent years. Students today require more hours of instruction and supportive services than they did 30 years ago. They also require specialized services, such as psychiatrists and media specialists, many of which did not exist in education until recently. Yet, as Seligman points out, although one may acknowledge the possible, though yet unproved, contributions of such increased resources to the quality of education, it must be acknowledged that education in general still fails to "minimize the input of man-hours and capital" in accomplishing its objective (1958, pp. 135-136).

An economic principle applicable here is that of "economy of scale." Hanson (1965) has defined economies of scale as being when larger investments of inputs result in lower costs per unit of output. Two reasons for the occurrence of economies of scale are (a) the indivisibility of some factors of production (e.g., it takes one teacher to staff a classroom, whether it contains one pupil or 30); and (b) the greater specialization of both staff and technological resources that can be attained when the number of each becomes larger. Increases in efficiency, then, would result from the greater division of labor and specialization of talent and tools which go into the production process (Harrow, 1967, p. 31).

Use of limited resources

The best method of increasing efficiency is to eliminate or at least reduce waste. The crucial nature of this need for efficiency is reflected in the fact that spending on education in recent years has increased faster than national output. "Generally speaking, education can be said to be economical when available resources are being allocated in a manner that maximizes student learning and minimizes waste, not only of money and materials but also of human talent and potential" (Kneller, p. 317). For too long educators have avoided concern with cost and investment and with quantitative approaches to education in general, on the grounds that such an orientation was inappropriate and detrimental to the "delicate art of teaching." However, as Kneller points out, such a concern may actually improve the state of the teaching art.

Fitzwater has succinctly summarized the nature of the relationship between district reorganization and economies of operation as follows:

> Reorganization (is) not an economy measure in the sense of reducing total school expenditures and cutting local tax rates ...It (is) a means of getting more and better education per tax dollar expended... Various economies become possible through more efficient administration and sound business practices... The general conclusion of state leaders (is) that an adequate, reorganized unit (is) able to provide at less cost the services provided by the old dis-

tricts it replaces; and that where total school expenditures (increase), significant educational improvements (result)" (1958, p. 87).

Until very recently, the public has assumed that the quality of educational programs is directly proportionate to the amount of money spent on them. Were this true, many of the smaller districts--some with per pupil expenditures twice those of large districts--would be providing programs of exceptional quality. The fact of the matter is, however, that in most cases the high per pupil cost is necessary for the district to continue to exist because of the numerous inefficiencies of operation resulting from its size. As the costs of education continue to increase, even the most indifferent citizen is beginning to demand more economical use of public funds for educational resources.

Increased public accountability

Public concern with the costs of education has arisen from several sources: (a) Federal spending on education, (b) concern with taxation and tax reform, and (c) increased involvement of citizens in educational decision-making. The impact of Federal investments in public education has directed public attention to education more than any other single factor. Although most Federal spending takes the form of special programs (e.g., ESEA, NDEA), the commitment it represents to the value of education in our society has greatly intensified the public concern with use of funds in the educational sector of the economy.

Coupled with increased Federal spending is the general increase in educational level and sophistication of the average citizen, presumably a result of the shift in commitment to the value of education for all citizens that has occurred in the past 20 years. This sophistication has given rise to a general concern with problems of taxation and tax reform, as well as an increasing demand for public involvement in the process of educational decision-making. If educators are to continue asking that education be treated as a "big business" (and at $28 billion per year, can it be anything else?), it is time they accepted the implications which that rubric entails in terms of accountability for sound fiscal management.

Equality of educational opportunity

Although the common referent when one talks of equal opportunity is that of race, strong indications exist that inadequate school districts are a major source of inferior educational opportunities for students and that these districts are not generally found in the ghettos of large cities. The very fact that, within a given State, per pupil expenditures may vary by a ratio of as much as 4 to 1 suggests the gross inadequacies of some districts.

Wise (1965) has advanced the proposition that denial of equal educational opportunity resulting from financial inadequacies is as unconstitutional as such denial on racial grounds. Although the Supreme Court has not yet been called on to rule in such a case, he contends that were such a ruling to occur, it would find present systems of educational finance and districting unconstitu-

tional. Faber, in concluding a substantive review of research in the area of district adequacy, states: "The evidence is quite clear that children who happen to live in a poorly organized district are being denied an opportunity for an education equal to that available to children living in a more fortunate community" (1966, p. 35). It seems obvious that equality of educational opportunity should be dependent on something more stable than an accident of geographical distribution.

Relationship between size and output

Although the variable of size is certainly not the only one in providing for optimum results in education, sufficient research evidence exists to indicate that it is a major contributor. Horton (1968) examined secondary schools in the State of Indiana and found a significant relationship between size and a measure of quality which was based on the North Central Association accreditation standards. Kowitz and Sayres (1959), in studying New York State high schools, found that large schools offer more than medium sized or small schools in seven areas (when offerings were considered independent of cost). These seven areas of superiority are:

1. Major course sequences.
2. Scope and variety of courses.
3. Activities.
4. Services.
5. Class size.
6. Volumes in library.
7. Teacher training (i.e., proportion with advanced degrees).

Although it is possible to disagree that these are any criteria of school quality, they have been used as criteria in most studies that have been conducted, and at least provide something on which objective measures can be obtained, rather than dealing in highly subjective generalities.

A longitudinal study by Kreitlow (1961) compared matched reorganized and nonreorganized districts in the State of Wisconsin. In general, his findings favored the reorganized districts. They showed, for example, that in reorganized districts boys scored 10 points higher and girls 34 points higher on standardized achievement tests than in nonreorganized districts. Hamilton and Rowe (1962) confirm this tendency of research data to favor generally reorganized districts.

One mitigating factor that should be pointed out is that any well-planned reorganization to alter a school district's size usually involves a number of other changes within the reconstituted district. In any study, therefore, it would be exceedingly difficult to isolate the effects of the reorganization alone. Although most studies of reorganization to date have indicated a definite improvement in the new districts, such improvement is probably the result of the interaction of a combination of factors, rather than just the reorganization (i.e., factors such as increased interest on the part of staff, inputs of new student groupings, etc.).

Summary

So far we have not attempted to review all of the research evidence related to the question of school district size, but rather have considered only sufficient information to place the problem of redistricting in perspective. Sufficient research evidence exists to indicate that a well-established relationship occurs between size and the following factors:

1. Per pupil costs.
2. Pupil achievement.
3. Breadth and quality of programs (measured in various ways).
4. Quality of teachers.

Two facts are notable about the available research in this area. First, there are few longitudinal studies in which an effort has been made either to match districts or at least to select from comparable situations. A noteworthy exception is the study of Kreitlow referred to above, which will continue until 1973. Second, there is no research available in any of the numerous resources reviewed by this writer which supports the value of inadequate districts. Although logical arguments have been offered in favor of small size in sparsely settled districts, in these cases the small district is regarded more as a necessary condition than as desirable.

Problems in Determining Optimum Size

The term "optimum" produces a certain wariness in anyone seeking to develop criteria for district size, and rightfully so. The roots of this caution seem to be four-fold:

1. Variability among situations.
2. The wide range of "research" results.
3. Lack of adequate criteria.
4. Resistance to redistricting.

Situational variability

A major problem in either the development or use of criteria for any purpose is the dynamic nature of the situation in which the criteria are to be applied. Any given situation must be viewed as in a continuous state of flux, as changing, perhaps imperceptibly, over time. Thus, criteria which seem highly relevant in one situation may be wholly inappropriate the following day. Likewise, criteria often apply specifically to only one situation, so that criteria which obtain in one district might be totally irrelevant to the situation in a neighboring district.

The dilemma alluded to here is this. If criteria are too specific and highly structured, they may lose their relevance at the slightest variation in the situation. Modifying the criteria to meet each new situation not only is an impossible task, but contradicts the purpose behind criteria development, which is to provide rules for taking action. The alternative extreme is to use criteria which are so general that they apply innocuously to any situation. Lacking precision, such criteria must ultimately be discarded, leaving the subjective judgment of the administrator as the only basis for decision.

Range of research results

If one were to search the education literature of the past 40 years for a definitive statement of the optimum size for a school district, he would find an

assortment of recommended figures with a range falling between 1,200 and 160,000 pupils per district. The problem involved here is that one study may be reporting optimum size for a given district based on certain criteria of performance judged to be important in that district, while another study may use completely different criteria. The situational specificity of criteria discussed in the previous section pertains to precisely this problem.

For example, Finch (1967) examined 16 cost measures used in cost-quality studies and related each of these to a general quality measure. He found that the nature of the cost measure used could influence the strength of the relationship to quality. This study casts doubt on the validity of the cost measures used in most cost-quality studies to date. Although the study's results are tentative, since Finch's quality criterion was not an independent measure of quality, its replication when an independent criterion of quality is developed should prove enlightening. At any rate, these results reflect the problem which administrators are faced with when attempting to find some research basis for making decisions related to redistricting.

The crux of the problem lies in the fact that some "researchers," overwhelmed by the heady wine of a completed research project, indiscreetly generalize their highly specific, limited results to the whole universe, imposing order whether it exists or not. Such findings offer little help for those administrators who are looking for a sound empirical basis for making decisions.

Lack of adequate criteria

The third problem facing the determination of optimum size is in answering the question, "Optimum for what?" No adequate criteria exist for measuring what is optimum. A distinction made by Mitzel (1961) between presage criteria and product criteria may be valuable in this context. Presage criteria refer to characteristics or attributes (e.g., number of teachers with advanced degrees) which have been shown to be related in some way to the concept of quality, and which, therefore, serve as predictors of quality. This is the category into which most research efforts to date have fallen.

The most meaningful criterion, the product, is unfortunately also the most elusive. To arrive at this measure it is necessary to define "quality education," and this seems to be an almost impossible task. The product criterion will continue to be elusive until a complete repertoire of behavioral objectives exists for the education process; efforts in this direction are increasing.

It is not overly surprising, then, that most criteria now in use for determining the optimum size of a school district are based largely on intuitive jumps from limited empirical data (mostly of a relational nature) which do exist. These criteria must be recognized as inadequate--as temporary substitutes which have already been used too long. It may well be that, when adequate product criteria exist, these intuitive jumps will be substantiated, but until then they can only be viewed as highly tentative conclusions that are better than none at all.

Resistance to redistricting

The fourth obstacle to measuring optimum size is the overall resistance to school district reorganization itself. The main source of this resistance seems to lie in antipathy toward change on the part of some administrators. In some respects, of course, this opposition by administrators may be an adaptive posture, since district reorganization inevitably entails the consolidation of some administrative positions. However, it is felt by this writer that such a rationale is seldom the principal concern of opponents of redistricting. There are a number of other reasons for the opposition to redistricting, such as:

1. Misunderstanding, or lack of understanding, of its purpose.
2. Resistance to change in general.
3. Fear that reorganization will result in centralization of government control.
4. Feelings that the organization of school districts is a matter of local concern (this despite the fact that a large portion of their operating revenues and building funds are provided by State governments).

Of these reasons, perhaps the most important and widely held is the third, that local control will be lost by redistricting. Such a concern is fallacious, however, in view of the fact that "...in recent years, because of weak and inefficient small school districts, the State has assumed more responsibility for establishing minimum standards in school buildings, curriculum, and finance. Thus local control of schools has actually diminished in the small district" (Evans). The situation can best be summarized as follows:

> It should be pointed out that effective and self-reliant school districts will be more effective in combating the tendency toward ever-increasing controls at State and county levels. If local control is truly desired, the right to that control must be earned by developing school districts of sufficient size and financial resources to provide a good quality, coordinated educational program for all grades; administered and staffed by competent persons and responsive to the community it serves through its elected representatives, the school board. Given strong, effective, and efficient school districts, the need for increasing controls from State and county levels to bolster the weak, inefficient districts will no longer exist and the Legislature must of necessity reflect the will of the people who, by their insistence on good school district organization, have indicated a desire for real and not fictional local control (California Commission on School District Organization, p. 32).

Similarly, Packard (1963) points out that the greatest disadvantages of a small school district are the inadequate administration and lack of local control by the board: "...too many services have to be furnished by other agencies" (p. 9).

Jensen (1952), in surveying Wisconsin superintendents regarding redistricting, found the major problems involved in redistricting to be (a) educa-

ting the general public; (b) transporting students; (c) fear of losing local representation; (d) changing taxes; and (e) concerns over the new building needs, use of the school, and location of the school when organization takes place.

This section has examined four problems involved in determining optimum district size: (a) situational variability, (b) the wide range of research results, (c) lack of adequate criteria, and (d) resistance to redistricting. The previous section attempted to establish a rationale for concern with optimum district size. It now seems appropriate, before setting forth any criteria for district size, to examine briefly some characteristics of ineffective districts to provide a focus for the development of criteria of adequacy.

Characteristics of Inadequate Districts

One approach to criteria development is to examine the negative aspects of a situation and then design criteria which would preclude those conditions from occurring. The negative effects of inadequate school districts have been widely proclaimed by almost all educators. The fact that such affirmations have not been unanimous does not mean that some educators see inadequate districts as beneficial. Rather, there do exist some educators who, although recognizing the detrimental effects of inadequacy, have been able to delude themselves that their district is not inadequate. In a sense, this rationalization is the real crux of the problem, for it permits administrators who are good educators and men of conscience in every sense to allow conditions to prevail in their districts which are effectively denying equal educational opportunity to their students.

Researchers have examined inadequate school districts throughout the country and, even though the situations in these districts varied widely (e.g., socioeconomically), a striking similarity across all situations becomes evident when the educational impact of district inadequacy is considered. The AASA Commission on School District Reorganization lists ten characteristics, or effects, of inadequacy:

1. Barren, meager, insipid curricula, particularly at the secondary school level.
2. Inability to attract and to hold high-quality teachers and administrators.
3. Inability to construct the school plants needed.
4. Needless waste of manpower through unjustifiably small classes and low pupil-teacher ratio.
5. Unreasonably high per-pupil expenditures for the quality of educational programs provided.
6. Inefficient use of financial and other educational resources.
7. Poor location of buildings.
8. Inequality of the burden of school support.
9. Cumbersome, complex formulas for distributing State school aid.
10. Absence of many needed specialized educational services that add quality to the educational program (1959, p. 23).

Numerous other studies have substantiated these problems. Dawson (1948), in an early study of small school districts, reported inefficiencies due to size in the following areas:

1. Adult education.
2. Kindergarten or nursery schools.
3. Special classes for physically and mentally handicapped.
4. Vocational education.
5. Health services.
6. Guidance and counseling services (pp. 25-42).

Maxey and Thomas suggest the following problem areas relevant to size:

1. The smaller the school district, the greater the probability for a teacher to teach in more than one or two subject areas.
2. Smaller schools sometimes require teachers to teach in areas where they are not as adequately prepared.
3. Teachers in small schools tend to have three or more course preparations much more frequently than teachers in larger school districts.
4. Larger districts pay teachers better salaries.
5. Teachers in larger districts meet more pupils daily as contrasted to the economically low teacher loads in some smaller districts. More appropriate pupil-teacher ratios are possible in larger schools.
6. Schools with larger enrollments tend to attract teachers with better preparation insofar as number of semester hours of course work is concerned.
7. As school district enrollment increases, more courses are available in both the junior and senior high schools.
8. As district enrollments increase, the largest increases in course offerings are noted in the areas of foreign language, business, technical and vocational education (Inman, 1968, p. 4).

Harrow's study of all the districts in the State of Florida revealed the following weaknesses of small, inadequate districts:

1. In all instances studied, the small districts were unable to operate efficiently.
2. In smaller counties with low pupil population, transportation costs per pupil are high.
3. Small counties have a greater administrative cost per pupil than large counties.
4. Small counties have difficulties attracting and holding qualified personnel.
5. In all instances studied, small counties provided a narrower educational program than large or reorganized counties (pp. 108-113).

Likewise, Conant, in The American High School Today, concluded in 1959 that one-third of the high schools in the nation were in units too small to offer adequate curricula at reasonable cost. Conant has stated:

> I believe such schools are not in a position to provide a satisfactory education for any group of their students--the academically talented, the vocationally oriented, or the slow reader. The instructional program is neither sufficiently broad nor sufficiently challenging. A small high school cannot by its very nature offer a comprehensive curriculum. Furthermore, such a school uses uneconomically the time and efforts of administrators, teachers, and specialists, the shortage of whom is a serious national problem (p. 77).

A major problem facing small districts is the difficulty of recruiting and maintaining qualified staff members. Coupled with this problem is the inability of small districts to use existing staff members efficiently. As Table II indicates, the smaller the district the greater the number of teachers and other employees per 1,000 pupils. This fact is related to the "economies of scale" principle discussed earlier.

The problem of staffing is exemplified by the difficulties encountered in recruiting administrators for small districts in the State of Washington. The Fifth Biennial Report of the Joint Committee on Education (1968) indicated that, on the basis of salary alone, second and third class districts in Washington cannot compete with first class districts. A comparison between the average salaries of high school principals in 12 higher-paying districts with the average salaries of superintendents in second and third class districts revealed the following:

Average high school principal salary in the 12 districts: $16,733

Average salaries for superintendents according to district size:

Large second class	$15,265
Medium second class	$13,110
Small second class	$11,247
Third class	$10,500

The significance of this discrepancy is that the gap is increasing and the small districts are less able to compete with larger districts in most respects.

In summary, considerable research evidence exists to substantiate the undesirable aspects of inadequate school districts. The principal areas of weakness are:

1. Inadequacy of curriculum.
2. Inability to draw and hold high-quality teachers and administrators; inefficient use of available staff.
3. Economic inefficiencies in terms of high per pupil expenditures for quality of program provided.
4. Inequality of effort required for support
5. Absences of specialized service.

Table II
Number of Full-Time Equivalent Employees Per
1,000 Pupils Enrolled, By Size of
School System: United States
October 1962

Size of School System	Teachers*	Other Employees	Total Employees
3,000 or more pupils	42.7	16.1	58.8
1,200 to 2,999 pupils	44.0	16.8	60.8
600 to 1,199 pupils	45.8	18.7	64.5
300 to 599 pupils	47.5	19.8	67.3
150 to 299 pupils	50.3	21.8	72.1
50 to 149 pupils	53.0	22.1	75.1
Less than 50 pupils	78.1	23.1	101.2
U.S. Average	43.7	16.7	60.4

* The summary term teachers has been used here to refer to all personnel reported by school systems as "instructional personnel," a category defined to include not only teachers but also principals, supervisors of instruction, school librarians, and guidance personnel; but not school superintendents or other administrative staff.

Source: U.S. Bureau of the Census, Census of Governments, 1962: Compendium of Public Employment, Vol. III, p. 499.

Optimum District Size According to Five Commonly Used Criteria

The foregoing discussion of characteristics of inadequate districts has emphasized the magnitude of the problems with which these districts are confronted, problems that occur in a wide variety of forms and which must, inevitably, have a negative influence on the educational program of these districts. Closer examination of these problems reveals that most of them can be combined into two general categories: (1) problems which affect the individual's right to equal educational opportunity, and (2) problems related to the allocation of economic resources (Harrow, p. 32).

Obviously, these factors are interrelated: Any restriction on economic resources will probably affect educational opportunities. Nevertheless, in determining criteria for district size this dichotomy becomes increasingly apparent as one reviews the results of previous efforts in this regard. The studies cited below focus on a wide variety of specific criteria, yet each specific criterion can be classified as relating directly to either equality of opportunity or allocation of resources or both.

It should be emphasized, as was stated earlier, that none of the following criteria has been demonstrated to be a desirable end product of the educational process. Rather, they are concomitants of that process which only indicate that the process is taking place, even though we are not yet capable of accurately measuring it. It is important that this limitation on the criteria be recognized, so as not to distort their significance.

Faber (1966, p. 33), reviewing criteria development efforts for the past 30 years, lists five commonly stated criteria for determining the size of a school district:

1. Scope of program.
2. Range of educational services.
3. The community.
4. Administrative and instructional staff.
5. Economic base.

Numerous other researchers have substantiated the widespread acceptance of these criteria by educators across the country (e.g., Harrow; State of Iowa, Department of Public Instruction, 1966; Kreitlow; Rowe and Hamilton, 1962; Gray, 1961; Blanke, 1960). A more detailed examination of these criteria will reveal their scope and the rationale underlying each.

Scope of the program

Benson sees two major needs that small districts cannot meet: (a) the need for improvement in vocational and technical programs, and (b) the need to provide continuing training of teachers (1965, p. 45). The State Department of Education of New York concluded from a comparison study of three high schools--two small schools and one large (1,718)--that larger size for a district provides opportunities for expanded course offerings, flexible scheduling to meet needs and abilities, and classes of sufficient size to implement economical instruction (1958).

The size recommended for an adequate instructional program that is economical varies. Conant (1959) recommends a minimum graduating class of 100, which would mean an administrative unit of 1,500-2,000 pupils. Grieder (1961) recommends 2,000-3,000 in average daily attendance. The National Citizens Committee for Public Schools (1956), in an earlier report to the President, stated that on the basis of available evidence, districts of 5,000 to 10,000 pupils have some financial and educational advantages over small districts. Another study, conducted for the State of Georgia, indicated that a district should serve a maximum of 15,000 to 20,000 students and a minimum of 10,000. The principal advantages of this size unit lie in the size of the administrative staff, specialized personnel, and supportive services that can be offered economically (Division of Field Services, Peabody College, 1966, p. 72).

The principal concern underlying this criterion is that an articulated program be provided from kindergarten through grade 12. Little, if any, attention has been focused on the elementary program that should be provided, most studies having examined either the district as a whole or the secondary program only.

Range of services

Blanke (1960) listed the following services as components of a quality educational program:

> Complete educational services should be offered, including special classes at all age levels for the physically and mentally handicapped; health, guidance and counseling services; remedial programs for the under-achievers in any subject matter area, and special programs for the academically gifted children. Adult education ought to be offered and, where necessary, the district should sponsor, or share in sponsoring, a junior or community college.

Faber (1966) cites the same elements.

An idea stated earlier (Seligman, 1958, pp. 135-136) bears repetition here. The effects of these aspects of the curriculum and program on educational outcomes is, for the most part, assumed, lacking empirical data for confirmation. Although their face validity is such that most educators are willing to acknowledge their importance to the total concept of education, the tentative nature of this relationship must be acknowledged.

Community related factors

For years in education a sacred aura has surrounded the importance of maintaining community identity in the public schools. Indeed, this is the whole idea underlying the neighborhood school. Recently, however, changing social conditions have necessitated a reexamination of the importance of the community "spirit," with some highly divergent results. Blanke makes the following statement:

> (Community) has been, and remains, a much used concept. The term "community," however, has many meanings. Some view a community as the area in which one shops, buys or sells, attends church, belongs to fraternal organizations, social groups, service clubs, or chambers of commerce and enjoys recreational activities. This is the locus for which the citizen feels a general loyalty and affinity. Others define a community as a geographic area where the socio-economic differences between the residents are not too great. Still others regard a community as the place where groups of people share the same local municipal government which provides services such as fire and police protection, libraries, water and sewers, and the like... The principal justification for seeking to organize school districts around so-called natural communities has been to maximize feelings of loyalty or pride in schools, but we have little evidence that schools with loyal patrons are, in fact, better schools. Nor do we have evidence that many school systems that include all or parts of many "natural" communities are necessarily poor schools. This is an assumption which has not been tested (1960).

The ranges of community size suggested vary considerably. Benson (1965, p. 45) recommended a total population of 250, 000. Morphet, et al., (1967) recommended an optimum student population of 50, 000, with 10, 000 as the minimum. Swanson (1961, p. 3) concluded from reviewing 30 years of research that optimum conditions for attainment of good quality educational programs exist in communities of 20, 000 to 50, 000. However, he does not exclude the possibility of quality educational services being offered in smaller or larger districts, but indicates that special arrangements must be made to insure quality programs. Packard (1963, p. 10) suggests a range of 4, 000-25, 000 as providing optimum opportunity for quality education, but adds a caution:

> Many of these (metropolitan) districts will attempt to define community identity in their plans and recommendations. Because communities are undergoing such rapid changes today, identity will be difficult to define. Freeways, shopping centers, housing tracts, and the large transit-type school bus have helped to change school communities...

Swanson (1960) reported a strong positive relationship between size and quality up to 28, 000 population. The relationship tapers off until at 67, 000 any further increase in size is not likely to be accompanied by any increase in

quality. Hanson (1962) pointed out that the size-cost relationship becomes increasingly difficult to analyze as districts become larger and more complex. In some States he studied, the low point of unit costs varied, but, in general, costs began to rise again as district size increased beyond that low point.

Administration and instructional staff

Several studies examining the optimum district size for administrative purposes have proposed an optimum unit of 9,000-12,000 pupils. Dawson (1934) recommended a unit of 9,800-12,000, with 280 teaching units. Inman (1968) reported the following results of a study by Manatt and Netusil of administrative costs related to size:

1. As district enrollments drop, per pupil costs for central administration, excluding costs of administering attendance units, increase rapidly.
2. Large districts spend more for special services than for supervision, and a still smaller ratio for general administration.
3. Median-sized school districts spend more dollars for general administration than for special services or educational supervisors.
4. Smaller districts of each state spend almost nothing for special services; a portion of the administrator's time is devoted to teaching.
5. Per capita expenditures for both general administration and total central administration vary inversely with district enrollment.
6. Small and median-sized districts do not have the services of educational supervisors or personnel assigned to special services.
7. Districts with 10,000 or more students spend more money for supervision and special services than for general administration
8. Districts of median and smaller size schools spend most of their total administrative budget on superintendents, assistants, and secretaries.

Economic aspects

The economic criterion of district size relates primarily to establishment of districts with sufficient financial support to provide an adequate instructional program. However, as Faber lamented in 1966, no one has translated this criterion into numerical terms. Two factors seem to relate to the criterion: (a) the economic potential (i.e., the population, assessed valuation, etc.), and (b) the willingness of citizens to allocate sufficient financial resources to support the schools.

In 1967, Faber studied 35 high school districts in an attempt to identify some factors contributing to educational quality and to examine their relative effect on enrollment and cost per pupil. A unique aspect of this study was its use of objective measures of educational quality which, when operationally de-

fined. could be converted to quantitative data for detailed analysis. The major factors associated with quality education he found were curriculum breadth, teachers' qualifications, and district financial resources. From these overall factors he derived 15 specific measures relating to district quality:

1. Curriculum waivers.
2. Staff stability.
3. Breadth of curriculum.
4. Teacher training index I (years of training).
5. Teacher training index II (Master's degree).
6. Teacher training index III (number not holding at least B. A. degree).
7. Tax rate.
8. Valuation per pupil.
9. Staff-pupil ratio.
10. Professional specialist ratio.
11. Specialization index.
12. Teaching in major area.
13. School income per student.
14. Average salary for teachers.
15. Average years longevity in the district (pp. 132-134).

The technique used by Faber in this study seems to this writer to offer considerable promise for evaluating the effect of certain measures as they relate to criteria of quality. Given appropriate values for the variables listed above, administrators could determine the necessary enrollment to provide the quality desired for any given cost. Of course, the variables would have to be modified to meet the situation. If a district were willing to commit itself to some objective (although imprecise) measures of program quality, this technique offers wide potential as an aid in decision-making concerning various elements of district size.

The report of the Mayor's Advisory Panel on Decentralization of the New York City Schools, commonly called the Bundy Report after the chairman of the panel, McGeorge Bundy, cited the following criteria for determination of district size:

1. Enrollment.
2. Fiscal resources.
3. Staff specialization.
4. Comprehensiveness of educational offerings.
5. Population density.
6. Topography.
7. Racial composition (1967, p. 16).

The scope and variety of the criteria described above make clear the fact that optimum size for a school district is a complex and multidimensional problem.

Trends in District Reorganization

Several significant trends seem evident in district reorganization efforts at the present time. First, increased metropolitanism is bringing about the concentration of pupils in fewer local districts. Second, large-city school systems have begun to move toward decentralization of administrative units to combat "bigness." Third, and related to the second trend, there is an increasing demand for, and movement toward, community involvement in educational decision-making.

Metropolitanism

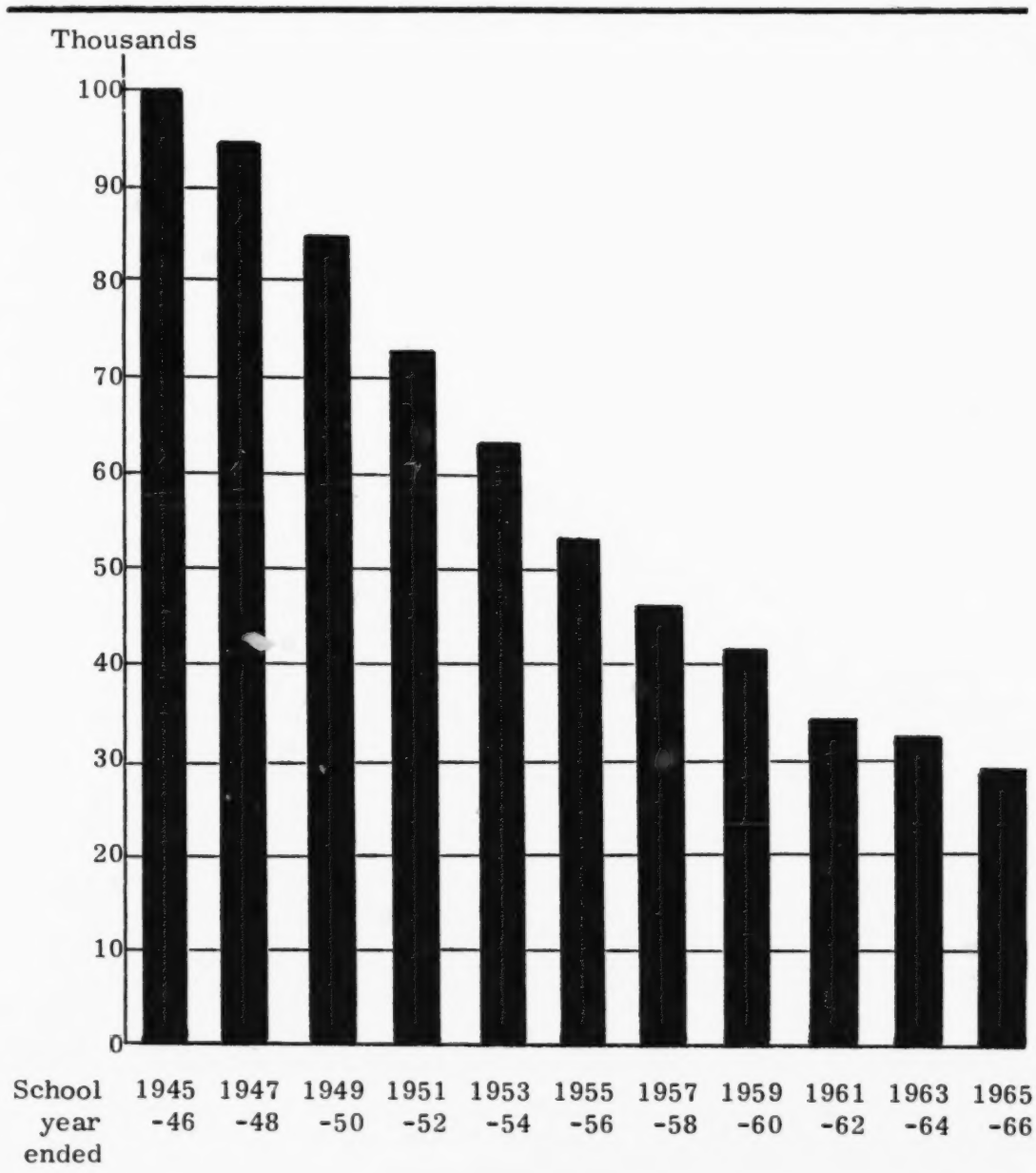
The term "metropolitanism" refers to the growing concentration of populations in and near big cities, an ecological phenomenon that has been increasingly characterizing American society since 1950. This phenomenon reflects the mass exodus of persons from small towns and rural countrysides to the streamlined living conditions of the metropolis and the megalopolis. Metropolitanism reflects the growing prominence of the metropolitan area--the central "core" city and its suburbs--in American society (Havighurst, 1968, p. 126).

The primary impact of metropolitanism on the school systems of large cities is two-fold: (a) the concentration of a large number of pupils in increasingly fewer, but larger, districts; and (b) the concomitant growth of racial and economic ghettos in the central core of the cities.

Table III indicates the decline in the number of local school districts in the past 20 years. Table IV summarizes the increase in the number of pupils in local districts in the United States over a 10-year period. It is significant to note as well that, while districts with more than 25,000 pupils comprise only 0.84 percent of the total operating school systems in the United States, these districts educate 28.58 percent of the nation's more than 42 million pupils.

The evolution of racial and economic ghettos acts to compound the problems already engendered by size. The paradox is this: Large size calls for some form of administrative decentralization, but decentralization tends to inhibit social (i.e., racial and economic) integration. Havighurst (p. 136) points

Table III
Number of School Districts
1945-46 to 1965-66



Source: U.S. Office of Education, Digest of Educational Statistics 1966.

Table IV
Number of Pupils in Local Districts (K-12)

Year	No. of Pupils
1955-56	31,163,000
1956-57	32,334,000
1957-58	33,529,000
1958-59	34,839,000
1959-60	36,087,000
1960-61	37,260,000
1961-62	38,253,000
1962-63	39,746,000
1963-64	41,251,000
1964-65	42,265,000

Source: U.S. Office of Education, Statistics of State School Systems, 1961-62, and USOE estimates.

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to the critical necessity of maintaining a viable balance among the following three forces at work in the complex dynamics of metropolitan school systems:

1. The drive for self-determination in matters of education and local government by the poor and the disadvantaged racial minorities;
2. The push for flexibility and innovation in the very large school systems;
3. The ideal of social integration of people of various racial and economic groups.

The Bundy Report is probably the most thorough and specific examination of the problems of administration in big-city schools. Focusing on New York City schools, the report recognizes the legitimacy of objections to bureaucratic inertia and to impotence characteristic of school administrations in extremely large systems (not to the exclusion of other size systems, it might be added). In addition, the political nature of metropolitan life has resulted in a series of conflicts and struggles for power to the detriment of the educational program. Although specifically referring to New York City, the following statement from the Bundy Committee reveals the critical nature of the power struggle which probably characterizes all excessively large districts:

> Neglect of this principle (i.e., the instrumental value of power as opposed to its value as a final goal) in our judgment, is responsible for much of what is wrong in the New York City Schools today. We find that the school system is heavily encumbered with constraints and limitations which are the result of efforts by one group to assert a negative and self-serving power against someone else. Historically these efforts have had ample justification, each in its

> time. To fend off the spoils system, to protect teachers from autocratic superiors, to ensure professional standards, or for dozens of other reasons, interest groups have naturally fought for protective rules. But as they operate today these constraints bid fair to strangle the system in its own checks and balances, so that New Yorkers will find themselves, in the next decade as in the last, paying more and more for less and less effective public education (p. 1).

Decentralization and community control

Featherstone and Hill (1969) contend that, in addition to the sheer concentration of numbers, four other forces tend to promote centralized administration of metropolitan districts. First, the growth of technology (as epitomized by the computer) and the necessity of economical operation dictate a very large unit served by a central computer facility. Second, attainment of certain social goals--often dictated by court decisions--may require a uniformity of approach that is enhanced by centralized administration. School integration and equality of educational opportunity are recent examples of such goals.

A third force is the sources of revenue for school operation, which generally require final responsibility and accountability of the superintendent of schools and preclude the transfer of that responsibility to operational subunits. Finally, the impact of teacher negotiations and the growing complexity of the process necessitate an approach that is largely centralized to assure equity of treatment for all concerned. Although these four forces generally do not necessitate a centralized structure, they do promote such a structure for reasons of expediency. These forces, it will be noted, tend to center primarily on the service or support side of the educational program.

Conversely, other forces exist which tend to favor a decentralized administrative organization and serve to counterbalance the forces described above. These include, but are not limited to, the following:

1. Increased sensitivity to the needs of heterogeneous groups within the city.
2. Quickness of response to those perceived needs.
3. Ability to use more effectively the highly talented members of the professional staff.
4. Increased community involvement in educational decision-making.

Janowitz (1969, p. 73) has stated that the thrust of decentralization was to increase organizational effectiveness by "(a) narrowing the span of control, (b) increasing lateral communications among operating units, and (c) most important, increasing the organizational authority of the individual principal."

The whole area of administrative decentralization is highly tentative and no "pat" answers exist to the many questions that arise. However, the Bundy Report indicated that the following criteria should be considered when determining the size of decentralized units:

1. Sense of community.
2. Efficient utilization of school buildings.
3. School feeder patterns.
4. Number of pupils who would have to transfer from schools they presently attend.
5. Diversity in composition of student population.

Related to these criteria are several standards developed by Dale (1952) for measuring the degree of decentralization of a given institution. According to Dale, the degree of managerial decentralization is greater:

1. The greater the number of decisions made lower down the management hierarchy.
2. The more important the decisions made lower down the management hierarchy...
3. The more functions affected by decisions made at lower levels...
4. The less checking required on the decision. Decentralization is the greatest when no check at all must be made; less when superiors have to be informed of the decision after it has been made; still less if superiors have to be consulted before the decision is made. The fewer people to be consulted, and the lower they are on the management hierarchy, the greater the degree of decentralization (p. 107).

Although these criteria provide only a comparative indication of the degree to which an organization is decentralized, they reflect a managerial philosophy which emphasizes diffused involvement in decision-making as a planned part of the administrative structure.

Decentralization, then, implies two interrelated processes:

1. The administrative reorganization of a large school district into smaller units;
2. The redistribution of educational decision-making power to provide for more community participation in decisions that affect the citizens (Havighurst, pp. 125, 136).

The appropriate mix of these two elements must, it would seem, be a local decision. The process of decentralization, per se, is merely a means toward achieving a stipulated educational goal; it must not become the goal itself. Janowitz (pp. 67-68) cautions:

> The demands for decentralization and citizen participation, in addition to their realistic elements, have become ideological slogans, that is, goals desirable in and of themselves. Decentralization, in particular, is only an organizational strategy that can be justified if it changes the behavior of principals and classroom teachers and of parents as well. Decentralization serves societal goals if it makes it possible for inner-city schools to render more effective and more individualized services.

In summary, the problems associated with large size seem to center around factors of communication, public expectancies, and unit variability within the same system (Vincent, 1966). Essentially, excessive size hampers the adaptability of the system, a result which, in the continuing state of flux in which man lives today, is fatal.

Summary of Research Findings: The Best Size for What?

This report has examined in detail a number of facets of the problem of school district reorganization, specifically those related to determination of optimum size for a school district. The obvious conclusion of the entire discussion is that size must be viewed as a variable and not as an absolute factor. Situational variables are strong and may profoundly influence the size/quality relationship in a district. Recognizing that a wide variety of research "evidence" exists on this problem, the question one needs to ask is: The optimum size for what? If the answer to that question is "for quality," the problem is right back at the beginning, for "quality" is a nebulous concept unless one is willing to specify its parameters.

Table V attempts to summarize optimum size recommendations from various sources according to various criteria. Some of the criterion measures are vague and general, others are quite specific and, therefore, limited. It is recommended that any administrator interested in pursuing a particular criterion consult the source listed in the table for additional details and limitations.

An attempt has been made in this report to present two types of information: (a) research data on the various problems considered, the type and quality of this data varying considerably; and (b) a perspective, or rationale, formulated by the writer and based on considerable reading and research into the literature relating to the problem. Obviously, the latter type of information may be of limited value to readers, except insofar as it represents a sincere attempt on the part of the writer to examine and report on all facets of the problem.

In beginning the task of reviewing and analyzing the literature on the question of the size/quality relationship, it was the intention of the writer to pursue both sides of the question and to express the concerns of the advocates of small districts, as well as those of their opponents. However, it became increasingly clear as the task progressed that there were no advocates of the small school district, or, if there were, they had not taken a public stand in defense of their beliefs. Excessively small districts are tolerated at best, their only viable defense seeming to be that they are necessary to provide education for children living in remote areas. To the writer's knowledge, this "remote and necessary" criterion is the only justification offered for the existence of the numerous small districts throughout the country.

Table V.

Summary of Optimum Size Recommendations

Criterion	Optimum Size	Source
Community control	50,000 total population	Havighurst (1968)
Community control	7,000-8,000 pupils	Havighurst (1968)
General quality	10,000 pupils (min.)	State of California
General quality	28,000 pupils	Swanson (1962)
General quality	50,000 pupils	Benson (1965)
General quality	1,500 pupils (min.)	Conant (1969)
General quality	10,000 pupils	Packard (1963)
General quality	25,000 pupils	Comm. for Economic Development (1960)
Quality/economy	10,000-20,000 pupils	Faber (1966)
Quality/economy	5,000 pupils (min.)	Fitzwater (1958)
Quality/economy	5,000-6,000 pupils (min.)	McClure
Quality/economy	12,000 pupils	Dawson (1948)
Effectiveness	10,000 pupils	Nat. Comm. on School District Reorg. (1948)
Cost/pupil	50,000 pupils	Hanson (1962)
Tax effort required	12,000 pupils	Vincent (1966)
Special staffing	25,000 pupils	Vincent (1966)
Net current expenditure	50,000 pupils	Vincent (1966)
Elementary school unit	500 pupils (max.)	NEA DEP (1954)
Secondary school unit	700-1,000 pupils	White House Conf. on Education
Administrative decentralization	300,000-500,000 total pop.	Havighurst (1968)
Administrative decentralization	20,000 pupils	Passow (1967)
Administrative decentralization	12,000-40,000 pupils	Bundy (1967)
Administrative district	20,000-50,000 pupils	IAR, Columbia Univ. (1961)
Administrative district	15,000-20,000 pupils	Peabody Coll. (1965)
Administrative district	10,000-12,000 pupils	AASA (1959)
Special Services:		
Adult education	20,000 (min.)	Great Plains School District Organization Project (1968)
Business administration	35,000-50,000 pupils	
Electronic Data Processing	100,000 pupils	
Special education	20,000 pupils	

The focal problem here is not merely one of adequate size permitting more "frills" or of saving a few dollars for each taxpayer. Rather, it is one of providing equitable educational opportunities for all students by providing educational programs which meet their diverse needs. Farrar and Purdy (1968) have stated this rationale well:

> Size, in and of itself, will not provide quality education. Size must be related to the objectives upon which a state school system organication is based ... Size becomes important when related to the tasks that size can accomplish to meet educational objectives adequately, efficiently, and economically.

The final determination of whether reorganization should occur depends, therefore, upon the district's ability to perform its respective functions with efficiency and effectiveness.

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